



UNITED STATES MARINE CORPS
MARINE CORPS SYSTEMS COMMAND
2200 LESTER STREET
QUANTICO, VIRGINIA 22134-5010

IN REPLY REFER TO:

5720
DON-USMC-2015-005390
29 Apr 15

DRS Technologies
Mr. Anthony Clayton
7375 Industrial Road
Florence KY 41042

SUBJECT: FOIA DON-USMC-2015-005390

Dear Mr. Clayton:

This responds to your FOIA request dated March 20, 2015, which requests a copy of contract M67854-13-C-5039, including modifications, the Statement of Work, any correspondence related to E2CU, Test report documentation and test debriefing documentation.

In light of the *MCI Worldcom, Inc. v. GSA* decision, the Department of Justice Office of Information and Privacy has advised the Navy Office of the General Counsel that submitter notification in accordance with Executive Order 12,600 should be made whenever an agency receives a FOIA request for documents that contain potentially confidential information in order to obtain and consider any objections to disclosure. Therefore, in accordance with Presidential Executive Order 12,600, we allowed the submitter to review the documents and provide comment.

Pursuant to the aforementioned Executive Order 12,600 request, the submitter provided the Marine Corps Systems Command with proposed redactions pursuant to Exemption 5 U.S.C. § 552(b)(4). These submitter redactions are identified in the enclosed documents.

FOIA Exemption 5 U.S.C. § 552(b)(4) exempts from disclosure (i) voluntarily submitted commercial or financial information provided that the submitter does not "customarily" disclose the information to the public and provided that disclosure would be likely to interfere with the continued and full availability of the information to the government, or (ii) information likely to cause substantial harm to the competitive position of the person from whom it was obtained and likely to impact on the government's ability to obtain reliable information in the future. See Critical Mass Energy Project v. NRC, 975 F2d 871, 879-80 (D.C. Cir. 1992), cert. denied, 113 S.Ct. 1579 (1993); National Parks & Conservation Ass'n v. Morton, 498 F2d 765, 766 (D.C. Cir. 1974); Canadian Commercial Corp. v. Dept. of Air Force, 514 F.3d 37 (D.C. Cir., 2008).

29 Apr 15

In an effort to minimize further delay we request that you review the enclosures and identify any withheld information that you believe was withheld improperly. MARCORSYSCOM will then determine whether the release of any requested information is proper under the FOIA and provide any additional releasable information in a "final release" letter. If we do not receive any notification from you, which specifically requests the release of any redacted information by May 15, 2015, this letter will become the final response and we will close this FOIA request.

As of April 29, 2015, one hour of search and review (currently billed at \$44 per hour) has been expended during the processing of your request. Please remit a check or money order, payable to the Treasurer of the United States in the amount of \$44.00 to: COMMANDER, ATTN LAW, MARCORSYSCOM, 2200 LESTER STREET, SUITE 120, QUANTICO VA 22134-5010.

If at any time you are not satisfied that a diligent effort was made to process your request, you may file an administrative appeal with the Assistant to the General Counsel (FOIA) at: Department of the Navy, Office of the General Counsel, ATTN: FOIA Appeals Office, 1000 Navy Pentagon Room 4E635, Washington DC 20350-1000.

For consideration, the appeal must be received in that office within 60 days from the date of this letter. Attach a copy of this letter and a statement regarding why you believe an adequate search was not conducted. Both your appeal letter and the envelope should bear the notation "FREEDOM OF INFORMATION ACT APPEAL". Please provide a copy of any such appeal letter to the MARCORSYSCOM address above.

Any questions concerning this matter should be directed to Mrs. Bobbie Cave at (703) 432-3934 or bobbie.cave@usmc.mil.

Sincerely,



for LISA L. BAKER
Counsel

SOLICITATION, OFFER AND AWARD			1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)		RATING	PAGE OF PAGES 1 41	
2. CONTRACT NO. M67854-13-C-5039		3. SOLICITATION NO. M67854-13-R-5012		4. TYPE OF SOLICITATION [] SEALED BID (IFB) [X] NEGOTIATED (RFP)		5. DATE ISSUED 14 Nov 2012	
6. REQUISITION/PURCHASE NO. M9545013RCR3DW2		7. ISSUED BY MARCORSYSCOM - PG15 ATTN: JAMILA BRANSFORD 2200 LESTER STREET QUANTICO VA 22134 CODE M67854		8. ADDRESS OFFER TO (If other than Item 7) See Item 7		CODE	
TEL: 703-432-3594 FAX		TEL: FAX					

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 6 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in _____ until 02:00 PM local time 04 Jan 2013
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME JAMILA BRANSFORD	B. TELEPHONE (Include area code) (NO COLLECT CALLS) 703-432-3726	C. E-MAIL ADDRESS jamila.bransford@usmc.mil
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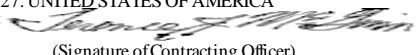
OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232-8)		Net 30 Days	
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):		AMENDMENT NO.	DATE
15A. NAME AND ADDRESS OF OFFEROR	CODE 0A0B7 MAINSTREAM ENGINEERING CORPORATION MICHAEL RIZZO 200 YELLOW PL ROCKLEDGE FL 32955-5327 mar@mainstream-engr.com	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	
15B. TELEPHONE NO (Include area code) 321 631 3550	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE. <input type="checkbox"/>	17. SIGNATURE	18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT \$999,499.92	21. ACCOUNTING AND APPROPRIATION See Schedule	
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c)() <input type="checkbox"/> 41 U.S.C. 253(c)()		23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM
24. ADMINISTERED BY (If other than Item 7) See Item 7	CODE SCD: C	25. PAYMENT WILL BE MADE BY DFAS - COLUMBUS CENTER DFAS - CO/SOUTH ENTITLEMENT OPERATIONS (8558) PO BOX 182264 COLUMBUS OH 43218-2264	CODE HQ0338
26. NAME OF CONTRACTING OFFICER (Type or print) TERRY MCGINN TEL: 703-432-5028 EMAIL: terence.mcgin@usmc.mil		27. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	28. AWARD DATE 08-Jul-2013

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

Section B - Supplies or Services and Prices

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001	Design/Fabrication/Delivery of E2CU FFP IAW wiith Paragraphs 3.0 -Technical Approach [3.1 Design/Fabriacation / 3.2 System Safety / and 3.3 Test Support) of the Statement of Work. The contractor is responsible for providing all materials, services and necessary support documentation needed to deliver three (3) 36K and three (3) 60K E2CU prototypes. Delivery of units shall be no later than twelve (12) months after contract award. Period of Performance for entire award/contract will be 18 months from date of award. FOB: Destination MILSTRIP: M9545013RCR3DW2 PURCHASE REQUEST NUMBER: M9545013RCR3DW2	12	Each	(b) (4)	(b) (4)
NET AMT					(b) (4)
ACRN AA CIN: M9545013RCR3DW20001					(b) (4)

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002	Technical Data FFP IAW Section 3.4 - Technical Data [3.4.1 Product Specification / 3.4.2 Affordability and Producibility Assessment / 3.4.3 Operations and Maintenance Manual / 3.4.4 Monthly Progress Reports / 3.4.5 Design and Fabrication Report] of the Statement of Work. CLIN IS NOT TO BE SEPARATELY PRICED. At six (6) months after award, the contractor shall deliver, in electronic format to email: nicholas.johnston@usmc.mil/ (703) 432-3589, a Draft Product Specification. An updated Products Specification shall be delivered with ECU delivery no later than 12 months after award. FOB: Destination				NSP
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
0003	Meetings FFP IAW Section 3.5 (Meetings) from the Statement of Work. [3.5.1 / 3.5.2 Design Brief / 3.5.3 Meeting Minutes / 3.6 Government Furnished Equipment/Materials/Information]. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. FOB: Destination				
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
000301	Meeting (Start of Work) FFP IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at Quantico, VA. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. FOB: Destination				
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
000302	Meeting (In Process Review) FFP IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at Quantico, VA three (3) months from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. FOB: Destination				
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
000303	Meeting (Final Design Review) FFP IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at contractor's location six (6) months from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. OFFEROR'S PROPOSAL SHALL NOT EXCEED \$1,000,00.00. FOB: Destination				
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
000304	Meeting (Test Readiness Review) FFP IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at Aberdeen, MD at the time of delivery. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. FOB: Destination				
NET AMT					\$0.00

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT NSP
0004	Training Government Personnel FFP IAW with SOW paragraph 3.1 (Design/Fabrication). Within two (2) weeks of delivery, the contractor shall train up to 15 Government personnel on operation and maintenance of each model. CLIN IS NOT TO BE SEPARATELY PRICED. FOB: Destination				
NET AMT					\$0.00

STATEMENT OF WORK

Statement of Work

Enhanced Environmental Control Units (36K/60K)



Prepared by

Product Manager - Expeditionary Power Systems

Marine Corps Systems Command

1.0 SCOPE.

The USMC has identified a future need for an Enhanced Environmental Control Units (E2CU) at the nominal cooling capacities of 36,000 BTU/hr (36K) and 60,000 BTU/hr (60K). This Statement of Work defines the effort required to define this capability both technically and for affordability in greater detail for future development and transition to production (separate future contract). The desired and required attributes for this capability are defined in the E2CU Performance Specification.

The contractor shall provide the requisite program management and technical effort to define and demonstrate the stated capability. This program will be executed in a stepped fashion in order to refine the concept, layout, and eventual configuration while reducing risk.

The contractor is responsible for providing all material, services, and necessary support documentation needed to deliver three 36K and three 60K E2CU prototypes and to complete the tasks identified in this Statement of Work (SOW).

All references to time periods of “days” in this document are in calendar days.

2.0 APPLICABLE DOCUMENTS.

The following documents specified form a part of this SOW to the extent specified herein. The most recent revision of the referenced document at the time of contract shall be used unless otherwise specified. In the event of conflict between the applicable documents and this SOW, the SOW shall take precedence. Nothing in this document supersedes applicable laws and regulations unless a specific exemption has been obtained. The following Military Standards and Specifications shall have Mandatory Compliance during this contract, where applicable.

MIL-STD-882	Standard Practice for System Safety
EPS-IS-001	Interface Specification, USMC Family of Environmental Control Units

3.0 TECHNICAL APPROACH.

This program is structured as follows:

3.1 Design/Fabrication: The design portion of the program that is anticipated will consist of the following: (1) Requirements definition, (2) Trade-offs analysis, (3) Affordability assessment (4) Conceptual design for the E2CU models to address the proposed capabilities of the Product Specification (PS), PS appendices for Environmental Factors, and the Interface Specification, and culminating in the (5) Fabrication of three (3) E2CU models of each size, for a total delivery of six (6) items. Delivery of units shall be no later than 12 months after contract award. Any contractor developmental testing shall be accomplished prior to prototype delivery. The contractor shall deliver all items capable of meeting the contractors proposed Product Specification, as well as all Critical Performance Parameters of the E2CU Performance Specification. Within two weeks of delivery, the contractor shall train up to 15 Government personnel on operation and maintenance of each model.

3.2 System Safety. Using MIL-STD 882, the contractor shall consider and implement safety engineering principles during all program phase efforts. System design and any operational procedures developed by the contractor shall identify hazards associated with the system by conducting safety analyses and hazard evaluations. Analysis shall include both operational and maintenance aspects of the system along with potential interface problems with planned subsystems.

3.3 Test Support. The contractor shall provide E2CU test and evaluation support for six (6) months after delivery of all items. The period of performance for this support shall commence on the date the last system is delivered to the Government and shall be all-inclusive for parts, labor and travel for up to three (3) trips lasting five (5) days total each, to testing sites within 500 miles of Washington DC. Any maintenance or repair not addressed in

the Operations and Maintenance Manual shall be covered under this service. This test and evaluation support shall be provided at the Government's request.

3.4 Technical Data

3.4.1 Product Specification. The contractor shall develop, maintain, update (as required), and deliver a Product Specification that describes the technical and functional performance of each E2CU model. At 6 months after award, the contractor shall deliver, in electronic format, a Draft Product Specification. An updated Product Specification shall be delivered with ECU delivery no later than 12 months after contract award.

3.4.2 Affordability and Producibility Assessment. The contractor shall deliver an Affordability and Producibility assessment of the E2CU models, Documenting design, Component, and Trade-offs that drive parts and system cost, E2CU production cost estimate, life cycle operational cost, and shall include fully burdened cost of energy. Results to date shall be briefed at each meeting/review, and all data, analysis and findings shall be incorporated in each delivered report. Government assumptions for cost factors will be provided at start of work meeting. A final assessment report shall be delivered with the units.

3.4.3 Operations and Maintenance Manual. This manual, in contractor format, shall contain a system description, set-up, operation, troubleshooting and basic maintenance instructions for use by test personnel. This manual shall be delivered in paper and electronic format concurrent with the E2CU items.

3.4.4 Monthly Progress Reports. For the life of the contract, the contractor shall provide monthly progress reports detailing technical progress and a detailed schedule of planned efforts. These shall be in contractor format and submitted via email no later than 10 days following the end of each month to the Contracting Officer's Representative (COR).

3.4.5 Design & Fabrication Report. With delivery of the E2CU items, the contractor shall provide a detailed Final Report documenting the E2CU design and features. This report shall include a discussion of trade-offs between efficiency, performance, ruggedness, and system reliability. This report shall also include a detailed discussion on the level of maturity of the technologies implemented in the contractor's design. Accompanying this report shall be certifications that the refrigerant and refrigerant pressure relief mechanism meets the requirements of the Performance Specification. This report shall be in contractor format, submitted in PDF format to the designated COR.

3.5 Meetings.

3.5.1 The contractor shall attend or host the following meetings no less than prescribed below:

Purpose	Frequency	Location
Start of work Meeting	Once	Quantico VA
In Process Design Review @ 4 months	Once	Quantico VA
Final Design Review (up to 6 attendees) @ 8 months	Once	Contractor Site
Test Readiness Review @ Delivery	Once	Aberdeen MD

3.5.2 Design Brief. The contractor shall provide the Government a draft of the contractor's design review brief slides 7 days prior to each of the two scheduled design reviews listed above. Each brief shall address, at a minimum, the Affordability and Manufacturability assessment, system design detail including analyses, a discussion of any safety concerns, any design tradeoffs, and a schedule update. The briefing slides should be appropriate for a brief not exceeding 4 hours.

3.5.3 Meeting Minutes. The contractor shall provide meeting minutes for each of the four (4) meetings listed above, and shall document all discussions with the Government on design tradeoffs, features, requirements, and requirement priorities. The contractor shall submit the meeting minutes within 7 days of meeting completion. The Government will review and provide a clarification memo, if needed, within 14 days of receipt of the draft minutes. The contractor shall submit revised meeting minutes within 14 days of receipt of the clarification, if requested.

3.6 **Government Furnished Equipment/Materials/Information.** Except as noted herein, The Government does not intend to provide materials, equipment, or information outside of the SOW, PS, PS Appendices, or the Marine Corps Environmental Specifications for the conduct of this effort.

PERFORMANCE SPECIFICATION

Performance Specification

Enhanced Environmental Control Units (E2CU)

3-TON, 36,000 BTU/hr (36K)

5-TON, 60,000 BTU/hr (60K)



Prepared by

Product Manager - Expeditionary Power Systems

Marine Corps Systems Command

1.0 SCOPE

1.1 Introduction. A need exists for an Enhanced Environmental Control Unit (E2CU) system that will address the performance objectives set forth in this document. This Performance Specification (PS) describes the technical objectives for the E2CUs. It is a principle objective of this program to dramatically improve the energy efficiency of the E2CU over current USMC ECUs, while retaining a high reliability level. A separate ECU Interface Specification (IS) accompanies this document as Appendix A, and further details the necessary interface requirements of each E2CU for proper interface with USMC shelter systems. Additionally, the Standard Marine Corps Environmental Specifications is included as Appendix B as guidance. Together with this document, these three documents address both minimally-required and desired characteristics for the E2CUs. This document contains two requirement levels: desired, and Critical Performance Parameter (CPP). Unless explicitly described as a **Critical Performance Parameter (CPP)**, all objectives contained in this PS are desired features. CPPs are identified by “**(Critical Performance Parameter (CPP))**” inserted prior to each applicable requirement; square brackets [] are used around multiple consecutive sentences that make up the CPP. CPPs are essential for successful fleet integration, and must be met to satisfy the Government’s minimum requirements. The Offeror may also propose their Value-adding features not listed here such as efficiency improvements, or on-board diagnostics. Additionally, the Offeror shall provide the requisite program management and logistics support to ensure that delivery, performance requirements, and overall supportability of the E2CU is accomplished as set forth in this contract. The amalgam of this PS, the IS, Statement of Work, and the contract set forth the requirements for this effort which includes the concurrent development of 36K and 60K BTU/hr E2CUs and prototype unit delivery for Government testing. No production option is included in this contract.

1.2 Technical Approach. This effort consists of the design, refinement, fabrication, and delivery of both 36K and 60K military Environmental Control Units (ECU’s) which meet the requirements contained in this PS. This effort also includes the requirements specified in the Statement of Work (SOW). Technical compliance shall also be based upon evidence (e.g., commercial specifications, test or performance data, etc.) of the E2CU to meet the performance standards set forth in this PS, the Interface Specification (IS), as well as conformance to the delivery schedule. The Offeror will be responsible for verifying that all delivered items can meet the requirements of the PS. Government testing may be performed at the Government’s discretion.

2.0 System Requirements

2.1 Functional Summary: This document establishes both required and desired performance attributes for the 36,000 and 60,000 British Thermal Units per hour (BTU/hr) ECUs. E2CU and ECU are used interchangeably in this document. The following nomenclature is also used in this document: 36K and 60K respectively. Functionally, the ECUs shall provide the following capabilities, as further defined in the body of this document and the Interface Specification:

- Cooling
- Heating
- Dehumidification
- Ventilation

- Physical and operational interface

2.2 Applicable Documents: The following documents may be applicable.

2.2.1 Government Documents

MIL-HDBK-454	General Guidelines for Electronic Equipment (Guidance Only)
MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-209	Slings and Tie-down Provisions for Lifting and Tying Down Military Equipment
MIL-STD-461	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
FED-STD-595	Colors Used in Government Procurement
MIL-STD-810	DOD Test Method Standard for Environmental Engineering and Laboratory Tests
MIL-STD-1472	Design for Human Interface Design
MIL-STD-882	Department of Defense Standard Practice System Safety

2.2.2 Non-Government Documents

ANSI Z535.4	Product Safety Signs and Labels
ARI 210/240	Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment
ASHRAE 34	Designation and Safety Classification of Refrigerants
ASHRAE 37	Methods of Testing for Rating Unitary Air Conditioning and Heat Pump Equipment.
NFPA 70	National Fire Protection Association, National Electric Code
UL 969	Marking and Labeling Systems
UL 1950	Standard for Safety of Information Technology Equipment

3.0 Physical Characteristics

3.1 Weight: The weight of each E2CU with a full refrigerant charge and all ancillary parts, including power cords, remote, and ducts, if applicable, shall not exceed the weight specified in the Interface Specification for each respective configuration.

3.2 Dimensions: (Critical Performance Parameter) The dimensions of the E2CU shall be within the constraints prescribed by the Interface Specification. Dimensions are the maximum for the ECU in storage configuration, with all ancillary components, including ducts, remote, and power cord stowed on/in the ECU. It is desired that the 36K and 60K models have similar footprints that permit stacking of 36K models on top of 60K models. It is also desired that the 36K and 60K units have passive locking systems for stacking purposes on inclines.

3.3 Handling Provisions: For local movement and positioning, it is desired that the E2CU be movable by Marines over short distances on dry ground. The E2CU may use an integral skid, wheels and tires, with tires/wheels which are removable or retractable without the use of externally-sourced tools. Provisions shall be made for stowing the wheels on the E2CU when not installed for use. The E2CU may have continuous handrails or minimum/foldable handles designed in accordance with MIL-STD 1472 to assist in manual localized movement and positioning. The E2CU may be provided with a three-point support when the wheels are installed and with integral means to prevent movement of the E2CU when parked in the level or specified inclined positions. If wheels are used, a positive braking mechanism must be included. Weight distribution of E2CU components shall provide a safe and stable configuration in all likely operating positions. This feature should not be included at the expense of efficiency, reliability, or the specified dimensional constraints in the stowed configuration.

3.4 Lift provisions: **(Critical Performance Parameter)** [The 36K and 60K BTU/h units shall be skid mounted for handling by standard USMC forklifts. Each E2CU shall be equipped with lift and tie-down provisions IAW MIL-STD 209.] It is desired that the E2CU be stackable at least two high, with a capability for locking together stacked units.

4.0 Performance

4.1 Efficiency: **(Critical Performance Parameter)** The cooling Coefficients of Performance (COP) of each model shall be no less than those specified in the Interface Specification at the rating conditions specified therein. It is desired that the Heating COP be no less than that specified in the Interface Specification. It is highly desired that the COPs be higher than the minimum specified in the Interface Specification.

4.2 Cooling Capacity: **(Critical Performance Parameter)** [The minimum net total cooling capacity and the minimum sensible heat ratio shall be as stated in the Interface Specification for 60 Hz operation. The E2CU cooling capacity shall be specified and determined using the ASHRAE 37 Room Air Enthalpy method, while operating against an external static pressure differential between the inlet and discharge at the shelter interface, as stated in the Interface Specification (Evaporator Airflow), and at the conditions stated in the IS.] A variable capacity feature which permits operation at reduced capacity and power draw during part load conditions is desired. Cooling and heating capacity and COP shall be determined at the tent interface such that distribution losses between the ECU and shelter are included in the testing.

4.3 Evaporator airflow: It is desired that the evaporator fan be capable of operation at multiple user-selected flow rates.

4.4 High temperature operation: **(Critical Performance Parameter)** The E2CU shall start and provide continuous cooling in an ambient temperature of 125°F, with 125°F air entering the evaporator and condenser sections. It is desired that the E2CU will start and provide continuous cooling in an ambient temperature of 130°F, with 130°F air entering the evaporator and condenser sections.

4.5 Heating capacity: The minimum heating capacity of each E2CU as measured at the specified rating point using ARI 210/240, shall be as specified in the Interface Specification. Power consumption shall not exceed the maximum specified in the Interface Specification. Use of a heat pump with electrical resistive backup and defrosting capability is highly desired. Electric resistive heating is acceptable for operation at very low temperatures.

4.6 Low temperature operation: **(Critical Performance Parameter)** After being subjected to minus 25°F (-25°F) for a period of not less than four hours, each E2CU shall start, operate and provide heating, and restart in the heating mode with air at minus 25°F (-25°F) entering into the evaporator inlet.

4.7 Inclined operation: **(Critical Performance Parameter)** [Each E2CU shall be capable of operating in COOL mode without malfunction when the base of the E2CU is positioned 10 degrees from the horizontal in any plane. During inclined operation, draining condensate shall be disposed of through the condensate drain line.]

4.8 Condensate Draining: There shall be no evidence of moisture “carryover” in the airflow leaving the conditioned air outlet or of leakage. It is desired that the exterior opening of the condensate drain possess a plugging mechanism to prevent insect and debris intrusion during storage.

5.0 Electrical System

5.1 Electrical performance: **(Critical Performance Parameter)** Each E2CU model shall operate as specified when supplied with up to +10% and down to -5% of the voltage specified in the IS, and with input frequencies either 50 or 60 Hz.

5.2 Power and steady-state current: **(Critical Performance Parameter)** The maximum total power consumption, minimum power factor, and maximum current of the E2CU operating in the HEAT and COOL modes shall be as specified in the Interface Specification.

5.3 In-rush current: **(Critical Performance Parameter)** The inrush current for each E2CU, including startup and any thermostatic cycling, shall not exceed the maximum current specified in the Interface Specification. Maximum inrush current is the Maximum Current specified in the IS as measured at a sampling frequency of 10 kHz.

5.4 Total Harmonic Distortion: The Total Harmonic Distortion (THD) of the current waveform imposed on the input power line by each E2CU shall not exceed 25%.

5.5 Electrical system: **(Critical Performance Parameter)** The E2CU shall be designed to comply with the National Electrical Code (NFPA 70) and as specified herein. MIL-HDBK-454 may be used as guidance in the design of the electrical system.

5.6 Power connector: The connectors for power input to the E2CU shall be as stated in the Interface Specification. Power wires shall include a label, sticker, or placard at the plug indicating which conductor and plug jack corresponds to which voltage phase/ground/neutral.

5.7 Power conductor color-coding: Conductor ends shall be colored in green, white, black, red, and blue. The USMC color coding standard is: Green – Ground; White – Neutral; Black – Phase A; Red – Phase B; and Blue (or other off color)-Phase C.

5.8 Power Cables: Each E2CU shall include a properly-sized power cable with a minimum length as specified in the Interface Specification.

6.0 Controls

6.1 Capacity Control: It is desired that the E2CUs be capable of actively modulating cooling and heating capacity to more efficiently control interior temperature. It is desired that the ECU include features to maximize efficiency during non-peak thermal loading.

6.2 Conditioned-air thermostat: **(Critical Performance Parameter)** The remote thermostat shall allow operators to regulate the conditioned space temperature to within a 10°F band of the selected temperature between 60° to 90°F. Thermostat bulb and capillary tubing (if used) shall withstand storage and transport in a temperature range of -50°F to 160°F.

6.3 High pressure cutout: **(Critical Performance Parameter)** E2CU shall have automatic controls that de-energize or otherwise protect the compressor from discharge pressure exceeding the compressor manufacturer's specified maximum operating pressure.

6.4 Low pressure cutout: **(Critical Performance Parameter)** E2CU shall have automatic controls that de-energize or otherwise protect the compressor from operation when the suction pressure falls below the compressor manufacturer's specified minimum operating pressure.

6.5 Heater high limit cutout: **(Critical Performance Parameter)** [A switch shall automatically de-energize the heater system in the HEAT mode when the interior of the evaporator compartment reaches between 180° and 250°F. All materials used in the evaporator compartment shall be able to withstand the maximum operating temperature without charring, becoming brittle, or otherwise becoming damaged.]

6.6 Control Box: **(Critical Performance Parameter)** Each E2CU shall have a control box with room thermostat, which shall be capable of operating the E2CU both remotely and when installed on the E2CU. No conductors connected to the remote control box shall exceed 30 volts. The minimum length of cable for the remote shall be 25 feet long. Labels and markings on Marine operated components (primary control box and remote control) shall be in accordance with MIL-STD-1472.

7.0 Refrigerant system

7.1 Refrigerant system: **(Critical Performance Parameter)** The refrigerant used in each E2CU shall be EPA-approved, and have an ozone depletion potential (ODP) of zero. The refrigerant shall have a safety classification of “A1” in accordance with ASHRAE 34.

7.2 Pressure relief: **(Critical Performance Parameter)** The E2CU shall have a mechanism to relieve refrigerant pressure in a safe location and manner in the event of an unmitigated pressure spike.

7.3 Service Ports: Two service connection ports, with standard fittings for the refrigerant used, shall be provided on the condenser section, one for high side (discharge) and one for low side (suction). The service connections shall be mounted in a protected or recessed area such that they can be accessed with the unit running and without affecting unit operation. Sufficient clearance shall be provided so that manifold gage hoses can be easily connected and disconnected to these service ports by gloved-hands.

7.4 Sight glass: A sight glass with moisture indicator, located in a protected location connected between the Condenser and Expansion Valve, shall be provided and be easily visible on the installed E2CU.

8.0 Air Handling System

8.1 Evaporator compartment air leakage: It is desired that the air leakage from the evaporator compartment not exceed 20 standard cubic feet per minute (scfm) when the evaporator compartment is subjected to an internal static pressure of 1.0-inch water gauge (in wg) at the E2CU.

8.2 Condenser and Evaporator covers: It is desired that the E2CU units have protective covers for the condenser air inlet and outlet during storage. It is desired that the E2CU condenser coil be equipped with shading from direct solar radiation.

8.3 Distribution: Each E2CU shall come with all necessary air distribution equipment (e.g. ducts) as specified in the Interface Specification. Ducts, if used, should be of a well insulated, low-loss design.

8.4 Fresh-air airflow: **(Critical Performance Parameter)** [A built-in fresh-air system with a damper shall be provided on each model E2CU. This feature shall provide fresh, filtered air from the exterior of the E2CU. When the evaporator is operating, outside air shall flow into the evaporator compartment when the damper is opened. When the damper is closed it shall positively seal off airflow with no leakage.] It is desired that the fresh air system provide a means for enthalpy recovery.

9.0 Environmental Considerations

9.1 Vibration: When subjected to MIL-STD-810, Procedure I, General Vibration Procedure, Restrained Cargo Category, Transportation scenario (non-operational during the test), using the composite wheeled vehicle profile (category 4), the E2CU shall show no evidence of structural damage, misalignment or malfunction of components, leaks, fractures, abnormal vibration, or any other irregular operation.

9.2 Electromagnetic Interference (EMI): **(Critical Performance Parameter)** [The E2CU shall meet all test method requirements specified herein, paragraphs 9.2.1 – 9.2.3, per MIL-STD-461F. When specific application requirements are specified in MIL-STD-461F, “Ground” and “Navy” shall apply unless specified otherwise.]

9.2.1 Radiated: The electromagnetic field emissions shall not be radiated from the E2CU or any interconnecting cables in excess of those shown in Method RE102, electric field, 2 MHz to 1 GHz. It is desired that E2CUs not exceed the maximum levels specified for ARMY ground equipment within the range of 10kHz to 18GHz.

9.2.2 Conducted: The conducted emissions on power leads shall not exceed the applicable values shown in Method CE102, power leads, 10 kHz to 10 MHz.

9.2.3 Susceptibility: If the E2CUs contain any circuit cards or electronic controls, the unit shall not be susceptible to conducted or radiated EMI in accordance with the following tests:

- Method CS101, power leads, second harmonic to 150 kHz.
- Method CS114, bulk cable injection, 10 kHz to 200 MHz.
- Method RS103, electric field, 30 MHz to 18 GHz.

9.3 Noise: **(Critical Performance Parameter)** The acoustic noise levels produced by the E2CUs shall not exceed the following limits:

9.3.1 The emitted sound pressure level on the evaporator side less than 65 dB(A) re: 20 μ Pa at one meter from any point on the perimeter of the evaporator side of the housing

9.3.2 The emitted sound pressure level on the condenser side less than 85 dB(A) re: 20 μ Pa at one meter from any point on the perimeter of the condenser side of the E2CU.

9.4 Chemical Biological, Radiation and Nuclear: **(Critical Performance Parameter)** Each E2CU air system shall be designed such that it inherently protects the conditioned air space from the contamination by CBRN agents located at the exterior of the shelter. Each E2CU shall be cable of passing a Static Vapor Challenge test using a Methyl Salicylate (MeS) simulation agent when subjected to the challenge with a 0.5 inwg overpressure in the Toxin Free Area (indoor side).

10.0 Reliability and Maintainability

10.1 Reliability: **(Critical Performance Parameter)** The Mean Time Between Failure (MTBF) shall be no less than 2100 hours demonstrated at 80% confidence.

10.2 Maintainability: **(Critical Performance Parameter)** The maintenance ratio shall be no greater than 0.017 hours of maintenance for each hour of operation.

10.3 Maintenance Access: The E2CU shall be maintainable through exterior access panels using only Marine Corps Standard tools. Ease of access, if possible, equipment design and installation should provide the maintainer with complete visual and physical access and a favorable working level for all parts of a system on which maintenance is performed, including interfaces, support equipment interfaces, access openings, adjustment points, test points, servicing points, and connections.

11.0 Safety

11.1 General: The E2CU shall be designed so that under all conditions of normal use (installation, operation, and maintenance) and under a likely fault condition (including human error), it protects against the risk of electric shock and other hazards (such as hot / cold thermal burns). Utilizing MIL-STD-882 terminology, “catastrophic” or “critical” hazards shall not rely solely on warnings, cautions, or procedures/training for control of risk. All safety hazards not eliminated through design shall be addressed in the appropriate technical manuals. Information regarding hazard-avoiding procedures and safety warning labels on equipment shall be included in all manuals.

11.2 Electrical safety:

11.2.1 Voltage: Operators shall not have access to components with voltages exceeding 30V. The operator will not be exposed to energy shock at the disconnecting means.

11.2.2 Contact: Protection will be provided to personnel during maintenance and repair to prevent unintentional contact with voltages exceeding 30V. Capacitors shall be discharged to less than 30V and 20J energy prior to maintainer access.

11.2.3 Lockout: The 36K and 60K units shall have the means to utilize lock out and tag out components to prevent unintended start up. The remote control panel shall have the means of a quick disconnect so that remote operation during maintenance activities will not occur.

11.2.4 Grounding: Equipment shall include a grounding lug in accordance with NFPA 70 electrical safety codes.

12.0 Marking and labeling

12.1 Identification plate: The identification plate shall be permanently attached to the housing in a location where it is visible. It is desired that a single identification plate include the following information:

A	Item Name
B	Manufacturer's name
C	Table of Authorized Materiel Control Number (TAMCN)
D	Item Description(e.g., AIR CONDITIONER, 3-TON, 36,000 BTU/HR, 115 V, 1 PH, 50 AND 60 HZ)
E	Model Number
F	Serial number
G	Date of manufacture (e.g., MAR 2014)
H	Contract number
I	National Stock Number (NSN)
J	Type of refrigerant (e.g., R-410A)
K	The refrigerant charge amount (e.g., 3 LB 6 OZ)
L	Unit Weight (e.g., 150 LB)
M	Notice of Warranty including duration
N	Item Unique Identification (IUID)

12.2 Safety markings and labels: Safety markings and labels, in accordance with ANSI Z535.4 and MIL-STD-1472, shall be provided identifying any potential hazards to personnel. Safety labels shall comply with the durability requirements of UL 1950, paragraph 1.7.15 and/or UL 969. Voltages in excess of 30V shall use the signal word "WARNING". Markings shall be readily visible.

12.3 Item Unique Identification: All E2CUs delivered may be serialized and marked per the requirements for IUID specified in MIL-STD-130, construct 2.

12.4 Operator Instruction Plates: The E2CU shall have operating instruction plates permanently attached to the exterior of the unit.

12.5 Permanency and Legibility: The IUID marking and identification plates shall be as permanent as the normal life expectancy of the item and be capable of withstanding the environmental test and cleaning procedures specified for the item. Legibility shall be as required for ready readability per MIL-STD-130.

13.0 Workmanship

13.1 Material protection: The E2CU shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable operating and storage environments to which the E2CU may be exposed. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

13.2 Externally exposed surfaces: It is highly desired that all externally exposed surfaces of the E2CU shall be cleaned and treated or painted unless otherwise specified herein. It is desired that surfaces which Marines will come in contact with not contain sharp edges. It is desired that the paint comply with FED-STD-595 green 383, color number 34094 or tan 686A, color number 33446.

13.3 Interior surfaces: The interiors of the condenser, evaporator, and control box shall be treated for corrosion protection. All sheet metal interior to E2CU, i.e. fan shrouds, ducts, brackets, etc. shall be cleaned and treated.

Acronyms

ACRONYM	DEFINITION
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
BTU/h	British Thermal Units per hour
COP	Coefficient Of Performance
CPP	Critical Performance Parameter
dB(A)	Decibels, A-weighted
E2CU	Enhanced Environmental Control Unit
ECU	Environmental Control Unit (interchangeable with E2CU)
EMI	Electromagnetic Interference
EPA	Environmental Protection Agency
FED-STD	Federal Standard
GHz	Gigahertz
Hz	Hertz
IAW	In accordance with
IEC	International Electrotechnical Commission
IS	Interface Standard
IUID	Item Unique Identification
kHz	Kilohertz
MHz	Megahertz
MIL-STD	Military Standard
NEC	National Electric Code
NFPA	National Fire Protection Association
NSN	National Stock Number
ODP	Ozone Depletion Potential
SOW	Statement of Work
THD	Total Harmonic Distortion
UL	Underwriters Laboratories
V	Volt

APPENDIX A

ENVIRONMENTAL CONTROL UNIT

INTERFACE SPECIFICATION

APPENDIX B

**Standard Marine Corps
Environmental Specifications**

Section D - Packaging and Marking

PACKING/SHIPPING/LABELING

Packaging, Handling, Shipping transportation and marking shall be per Performance Specification if applicable for delivery of such item.

CLAUSES INCORPORATED BY FULL TEXT

252.211-7003 ITEM IDENTIFICATION AND VALUATION (JUN 2011)

(a) Definitions. As used in this clause'

Automatic identification device means a device, such as a reader or interrogator, used to retrieve data encoded on machine-readable media.

Concatenated unique item identifier means--

(1) For items that are serialized within the enterprise identifier, the linking together of the unique identifier data elements in order of the issuing agency code, enterprise identifier, and unique serial number within the enterprise identifier; or

(2) For items that are serialized within the original part, lot, or batch number, the linking together of the unique identifier data elements in order of the issuing agency code; enterprise identifier; original part, lot, or batch number; and serial number within the original part, lot, or batch number.

Data qualifier means a specified character (or string of characters) that immediately precedes a data field that defines the general category or intended use of the data that follows.

DoD recognized unique identification equivalent means a unique identification method that is in commercial use and has been recognized by DoD. All DoD recognized unique identification equivalents are listed at http://www.acq.osd.mil/dpap/pdi/uid/iuid_equivalents.html.

DoD unique item identification means a system of marking items delivered to DoD with unique item identifiers that have machine-readable data elements to distinguish an item from all other like and unlike items. For items that are serialized within the enterprise identifier, the unique item identifier shall include the data elements of the enterprise identifier and a unique serial number. For items that are serialized within the part, lot, or batch number within the enterprise identifier, the unique item identifier shall include the data elements of the enterprise identifier; the original part, lot, or batch number; and the serial number.

Enterprise means the entity (e.g., a manufacturer or vendor) responsible for assigning unique item identifiers to items.

Enterprise identifier means a code that is uniquely assigned to an enterprise by an issuing agency.

Government's unit acquisition cost means--

(1) For fixed-price type line, subline, or exhibit line items, the unit price identified in the contract at the time of delivery;

(2) For cost-type or undefinitized line, subline, or exhibit line items, the Contractor's estimated fully burdened unit cost to the Government at the time of delivery; and

(3) For items produced under a time-and-materials contract, the Contractor's estimated fully burdened unit cost to the Government at the time of delivery.

Issuing agency means an organization responsible for assigning a globally unique identifier to an enterprise (e.g., Dun & Bradstreet's Data Universal Numbering System (DUNS) Number, GS1 Company Prefix, Allied Committee 135 NATO Commercial and Government Entity (NCAGE)/Commercial and Government Entity (CAGE) Code, or the Coded Representation of the North American Telecommunications Industry Manufacturers, Suppliers, and Related Service Companies (ATIS-0322000) Number), European Health Industry Business Communication Council (EHIBCC) and Health Industry Business Communication Council (HIBCC)), as indicated in the Register of Issuing Agency Codes for ISO/IEC 15459, located at <http://www.nen.nl/web/Normen-ontwikkelen/ISOIEC-15459-Issuing-Agency-Codes.htm>.

Issuing agency code means a code that designates the registration (or controlling) authority for the enterprise identifier.

Item means a single hardware article or a single unit formed by a grouping of subassemblies, components, or constituent parts.

Lot or batch number means an identifying number assigned by the enterprise to a designated group of items, usually referred to as either a lot or a batch, all of which were manufactured under identical conditions.

Machine-readable means an automatic identification technology media, such as bar codes, contact memory buttons, radio frequency identification, or optical memory cards.

Original part number means a combination of numbers or letters assigned by the enterprise at item creation to a class of items with the same form, fit, function, and interface.

Parent item means the item assembly, intermediate component, or subassembly that has an embedded item with a unique item identifier or DoD recognized unique identification equivalent.

Serial number within the enterprise identifier means a combination of numbers, letters, or symbols assigned by the enterprise to an item that provides for the differentiation of that item from any other like and unlike item and is never used again within the enterprise.

Serial number within the part, lot, or batch number means a combination of numbers or letters assigned by the enterprise to an item that provides for the differentiation of that item from any other like item within a part, lot, or batch number assignment.

Serialization within the enterprise identifier means each item produced is assigned a serial number that is unique among all the tangible items produced by the enterprise and is never used again. The enterprise is responsible for ensuring unique serialization within the enterprise identifier.

Serialization within the part, lot, or batch number means each item of a particular part, lot, or batch number is assigned a unique serial number within that part, lot, or batch number assignment. The enterprise is responsible for ensuring unique serialization within the part, lot, or batch number within the enterprise identifier.

Unique item identifier means a set of data elements marked on items that is globally unique and unambiguous. The term includes a concatenated unique item identifier or a DoD recognized unique identification equivalent.

Unique item identifier type means a designator to indicate which method of uniquely identifying a part has been used. The current list of accepted unique item identifier types is maintained at http://www.acq.osd.mil/dpap/pdi/uid/uii_types.html.

(b) The Contractor shall deliver all items under a contract line, subline, or exhibit line item.

(c) Unique item identifier.

(1) The Contractor shall provide a unique item identifier for the following:

(i) All delivered items for which the Government's unit acquisition cost is \$5,000 or more.

(ii) The following items for which the Government's unit acquisition cost is less than \$5,000:

Contract line, subline, or exhibit line item No.	Item description
N/A	

(iii) Subassemblies, components, and parts embedded within delivered items as specified in Attachment Number ---
.

(2) The unique item identifier and the component data elements of the DoD unique item identification shall not change over the life of the item.

(3) Data syntax and semantics of unique item identifiers. The Contractor shall ensure that--

(i) The encoded data elements (except issuing agency code) of the unique item identifier are marked on the item using one of the following three types of data qualifiers, as determined by the Contractor:

(A) Application Identifiers (AIs) (Format Indicator 05 of ISO/IEC International Standard 15434), in accordance with ISO/IEC International Standard 15418, Information Technology--EAN/UCC Application Identifiers and Fact Data Identifiers and Maintenance and ANSI MH 10.8.2 Data Identifier and Application Identifier Standard.

(B) Data Identifiers (DIs) (Format Indicator 06 of ISO/IEC International Standard 15434), in accordance with ISO/IEC International Standard 15418, Information Technology--EAN/UCC Application Identifiers and Fact Data Identifiers and Maintenance and ANSI MH 10.8.2 Data Identifier and Application Identifier Standard.

(C) Text Element Identifiers (TEIs) (Format Indicator 12 of ISO/IEC International Standard 15434), in accordance with the Air Transport Association Common Support Data Dictionary; and

(ii) The encoded data elements of the unique item identifier conform to the transfer structure, syntax, and coding of messages and data formats specified for Format Indicators 05, 06, and 12 in ISO/IEC International Standard 15434, Information Technology--Transfer Syntax for High Capacity Automatic Data Capture Media.

(4) Unique item identifier.

(i) The Contractor shall--

(A) Determine whether to--

(1) Serialize within the enterprise identifier;

(2) Serialize within the part, lot, or batch number; or

(3) Use a DoD recognized unique identification equivalent; and

(B) Place the data elements of the unique item identifier (enterprise identifier; serial number; DoD recognized unique identification equivalent; and for serialization within the part, lot, or batch number only: original part, lot, or

batch number) on items requiring marking by paragraph (c)(1) of this clause, based on the criteria provided in the version of MIL-STD-130, Identification Marking of U.S. Military Property, cited in the contract Schedule.

(ii) The issuing agency code--

(A) Shall not be placed on the item; and

(B) Shall be derived from the data qualifier for the enterprise identifier.

(d) For each item that requires unique item identification under paragraph (c)(1)(i) or (ii) of this clause, in addition to the information provided as part of the Material Inspection and Receiving Report specified elsewhere in this contract, the Contractor shall report at the time of delivery, either as part of, or associated with, the Material Inspection and Receiving Report, the following information:

(1) Unique item identifier.

(2) Unique item identifier type.

(3) Issuing agency code (if concatenated unique item identifier is used).

(4) Enterprise identifier (if concatenated unique item identifier is used).

(5) Original part number (if there is serialization within the original part number).

(6) Lot or batch number (if there is serialization within the lot or batch number).

(7) Current part number (optional and only if not the same as the original part number).

(8) Current part number effective date (optional and only if current part number is used).

(9) Serial number (if concatenated unique item identifier is used).

(10) Government's unit acquisition cost.

(11) Unit of measure.

(e) For embedded subassemblies, components, and parts that require DoD unique item identification under paragraph (c)(1)(iii) of this clause, the Contractor shall report as part of, or associated with, the Material Inspection and Receiving Report specified elsewhere in this contract, the following information:

(1) Unique item identifier of the parent item under paragraph (c)(1) of this clause that contains the embedded subassembly, component, or part.

(2) Unique item identifier of the embedded subassembly, component, or part.

(3) Unique item identifier type.**

(4) Issuing agency code (if concatenated unique item identifier is used).**

(5) Enterprise identifier (if concatenated unique item identifier is used).**

(6) Original part number (if there is serialization within the original part number).**

(7) Lot or batch number (if there is serialization within the lot or batch number).**

(8) Current part number (optional and only if not the same as the original part number).**

(9) Current part number effective date (optional and only if current part number is used).**

(10) Serial number (if concatenated unique item identifier is used).**

(11) Description.

** Once per item.

(f) The Contractor shall submit the information required by paragraphs (d) and (e) of this clause in accordance with the data submission procedures at http://www.acq.osd.mil/dpap/pdi/uid/data_submission_information.html.

(g) Subcontracts. If the Contractor acquires by subcontract, any item(s) for which unique item identification is required in accordance with paragraph (c)(1) of this clause, the Contractor shall include this clause, including this paragraph (g), in the applicable subcontract(s).

(End of clause)

Section E - Inspection and Acceptance

PROJECT OFFICER

The Project Officer for this solicitation/contract is Commander, Marine Corps Systems Command, Attn: Nicholas Johnston, 2200 Lester Street, Quantico, Virginia 22134, Telephone (703) 432-3589.

Inspection and acceptance of contract deliverables are the responsibility of the Project Officer or his duly authorized representative(s) except as otherwise specified in the contract. Moreover, the Project Officer serves in a supporting role to the Contracting Officer, providing advice and expertise on technical issues. However, only the Contracting Officer has the authority to authorize deviations from the terms and conditions of this contract, including deviations from statement of work/performance specification requirements.

In the event the contractor does deviate, without written approval from the Contracting Officer, such deviation shall be at the risk of, and any costs related thereto, shall be borne by the Contractor.

INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

CLIN	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
0001	Destination	Government	Destination	Government
0002	Destination	Government	Destination	Government
0003	Destination	Government	Destination	Government
000301	Destination	Government	Destination	Government
000302	Destination	Government	Destination	Government
000303	Destination	Government	Destination	Government
000304	Destination	Government	Destination	Government
0004	N/A	N/A	N/A	Government

CLAUSES INCORPORATED BY REFERENCE

52.246-2	Inspection Of Supplies--Fixed Price	AUG 1996
52.246-7	Inspection Of Research And Development Fixed Price	AUG 1996
52.246-16	Responsibility For Supplies	APR 1984
252.246-7000	Material Inspection And Receiving Report	MAR 2008

Section F - Deliveries or Performance

DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	12 mths. ADC	12	U.S. ARMY ABERDEEN TEST CENTER MATT MEHALICK 400 COLLERAN RD. B507 ABERDEEN MD 21005 410-278-6064 FOB: Destination	W81C5M
0002	03-JAN-2014		EPS NICHOLAS JOHNSTON MARCORSYSCOM 2200 LESTER STREET QUANTICO VA 22134 703-432-3513 FOB: Destination	M67854
0003	N/A	N/A	N/A	N/A
000301	POP 03-JUL-2013 TO 08-AUG-2013	N/A	EPS NICHOLAS JOHNSTON MARCORSYSCOM 2200 LESTER STREET QUANTICO VA 22134 703-432-3513 FOB: Destination	M67854
000302	POP 04-NOV-2013 TO 05-DEC-2013	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	M67854
000303	POP 03-MAR-2014 TO 31-MAR-2014	N/A	N/A FOB: Destination	
000304	POP 02-JUL-2014 TO 03-JUL-2014	N/A	U.S. ARMY ABERDEEN TEST CENTER MATT MEHALICK 400 COLLERAN RD. B507 ABERDEEN MD 21005 410-278-6064 FOB: Destination	W81C5M
0004	POP 07-JUL-2014 TO 18-JUL-2014	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W81C5M

CLAUSES INCORPORATED BY REFERENCE

52.242-15	Stop-Work Order	AUG 1989
52.247-34	F.O.B. Destination	NOV 1991
52.247-48	F.O.B. Destination--Evidence Of Shipment	FEB 1999

Section G - Contract Administration Data

CONTRACT ADMINISTRATIONCONTRACT INFORMATION

CONTRACT TYPE: A Firm Fixed Price Multiple Award contract may be awarded.

CONTRACT FUNDING: The Government's obligation under this contract is contingent upon the availability of appropriated funds. Funding is provided in the amount of \$999,499.92.

AWARD: The Government reserves the right to award contract(s) to the responsible offeror(s) whose proposal(s) are determined to be in the best interest of the Government other than the lowest priced offeror or other than the highest technically rated offeror.

PERIOD OF PERFORMANCE: The period of performance for the subject contract will be 18 months.

PACKAGING/ DELIVERY/SHIPPING INSTRUCTIONS: Packaging, handling, shipping transportation and marking shall be per Performance Specification.

POINTS OF CONTACT:

Title	Name	Address	Phone	Email
Contracting Officer	Mr. Terence J. McGinn	2200 Lester St. Quantico, VA 22134-5010	(703) 432-3563	Terence.McGinn@usmc.mil
Contract Specialist	Ms. Jamila Z. Bransford	2200 Lester St. Quantico, VA 22134-5010	(703) 432-3726	Jamila.Bransford@usmc.mil
Project Officer	Mr. Nicholas Johnston	2200 Lester St. Quantico, VA 22134-5010	(703) 432- 3589	Nicholas.Johnston@usmc.mil
DCMA	N/A	N/A	N/A	N/A
DFAS (HQ0338)	DFAS Columbus Center – HQ0338	DFAS CO/South Entitlement Operations, P. O. Box 182264, Columbus, OH 43218- 2264	(800) 756- 4571	N/A

ACCOUNTING AND APPROPRIATION DATA

AA: 1731319M7KF 251 67854 067443 2D C2510Z

COST CODE: 3RCR3DW2154P

AMOUNT: \$999,499.92

CIN M9545013RCR3DW20001: \$999,499.92

Section H - Special Contract Requirements

SPECIAL CONTRACT REQUIREMENTS

SPECIAL CONTRACT REQUIREMENTS

H-1 INCORPORATION OF REPRESENTATIONS AND CERTIFICATIONS BY REFERENCE

All representations and certifications and other written statements made by the contractor in response to SECTION K of the solicitation or at the request of the contracting officer, incident to the award of the contract or modification of this contract, are hereby incorporated by reference with the same force and effect as if they were given in full text.

H-2 INCORPORATION OF PROPOSAL

The Contracting Officer, may, upon contract award, incorporate all or parts of the contractor's proposal submitted in response to RFP M67854-13-R-5012. If portions of the proposal are included as attachments to this contract, they will fall under FAR 52.215-8(d) in the order of precedence clause.

The following paragraphs from Mainstream Engineering Corporation Technical proposal dated 4 January 2013 are hereby incorporated:

- Section 4.1 Efficiency: The Coefficients of Performance declared in paragraph 4.1 (Efficiency) of the Technical Volume of the proposal are incorporated as the minimum efficiency requirements and supersede the minimum efficiency requirements given in the Performance Specification, Appendix A.
- Section 4.4 High Temperature Condition: As described in Section 4.4 High Temperature Condition) of the Technical Volume of the proposal, the E2CU shall include microprocessor-based embedded and predictive diagnostic features.

H-3 CONTRACTOR NOTICE REGARDING LATE DELIVERY

In the event that the contractor, for any reason, anticipates or encounters difficulty in complying with the contract delivery schedule or date, or in meeting any of the other requirements of the contract, they shall immediately notify the Administrative and Procuring Contracting Officers (ACO and PCO) in writing, providing all of the pertinent details. This data shall be informational only in character and its receipt by the Government shall not be construed as a waiver by the Government of (i) any delivery schedule or date, (ii) compliance with any other contract requirement by the contractor, or (iii) any other rights or remedies belonging to the Government under law or otherwise under this contract.

H-4 CONTRACT CHANGES

No order, statement, or conduct of Government personnel who might visit the contractor's facility or in any other manner communicated with contractor personnel during the performance of this contract shall constitute a change under the "Changes" clause of this contract.

No understanding or agreement, contract modification, change order, or other matter deviating from or constituting an alteration or change of the terms of the contract shall be effective or binding upon the Government unless formalized by contractual documents executed by the contracting officer or his or her designated representative.

The Contracting Officer is the only person authorized to approve changes in any of the requirements of this contract and, notwithstanding provisions contained elsewhere in the contract, the said authority remains solely with the Contracting Officer. In the event that the contractor effects any change at the direction of any person other than the Contracting Officer, the change will be considered to have been made without authority at the contractor's expense, and no adjustment shall be made in the contract price or other contract terms and conditions as consideration for the aforementioned unauthorized change. Further, should the unauthorized change be to the Government's detriment, the contractor may be held financially responsible for its correction.

H-5 GOVERNMENT PRODUCTION AND RESEARCH PROPERTY

If the offeror/contractor plans to use, in performing the work under this solicitation/contract, any items of Government property in the Offeror's/contractor's possession under a facilities contract or other agreement independent of this solicitation, the offeror shall so state in their proposal and identify (by contract number, Government agency, and contract administrator) the facilities he proposes to use. Moreover, the offeror shall request written concurrence to use each item of such Government property from the cognizant Contracting Officer.

H-6 RESPONSIBILITY IN SUBCONTRACTING

The contractor shall provide the technology processes, test procedures, data, drawings, and/or other information required to facilitate competition to the fullest extent feasible, and assure performance by selected subcontractors. The contractor will be fully responsible for assuring that all appropriate contractual provisions and clauses are passed down to its subcontractors, and that those provisions are enforced.

Section I - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JAN 2012
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-7	Anti-Kickback Procedures	OCT 2010
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	OCT 2010
52.203-13	Contractor Code of Business Ethics and Conduct	APR 2010
52.203-16	Preventing Personal Conflicts of Interest	DEC 2011
52.204-4	Printed or Copied Double-Sided on Postconsumer Fiber Content Paper	MAY 2011
52.204-10	Reporting Executive Compensation and First-Tier Subcontract Awards	FEB 2012
52.204-99 (Dev)	System for Award Management Registration (Deviation)	AUG 2012
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	DEC 2010
52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters	FEB 2012
52.209-10	Prohibition on Contracting With Inverted Domestic Corporations	MAY 2012
52.215-2	Audit and Records--Negotiation	OCT 2010
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997
52.215-14	Integrity of Unit Prices	OCT 2010
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns	JAN 2011
52.219-8	Utilization of Small Business Concerns	JAN 2011
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-3	Convict Labor	JUN 2003
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	MAR 2007
52.222-35	Equal Opportunity for Veterans	SEP 2010
52.222-36	Affirmative Action For Workers With Disabilities	OCT 2010
52.222-37	Employment Reports on Veterans	SEP 2010
52.222-40	Notification of Employee Rights Under the National Labor Relations Act	DEC 2010
52.222-50	Combating Trafficking in Persons	FEB 2009
52.222-54	Employment Eligibility Verification	JAN 2009
52.223-3	Hazardous Material Identification And Material Safety Data	JAN 1997
52.223-5	Pollution Prevention and Right-to-Know Information	MAY 2011
52.223-6	Drug-Free Workplace	MAY 2001
52.223-10	Waste Reduction Program	MAY 2011
52.223-18	Encouraging Contractor Policies To Ban Text Messaging While Driving	AUG 2011
52.223-19	Compliance with Environmental Management Systems	MAY 2011
52.225-13	Restrictions on Certain Foreign Purchases	JUN 2008
52.225-25	Prohibition on Engaging in Sanctioned Activities Relating to Iran--Certification.	NOV 2011

52.227-1 Alt I	Authorization And Consent (Dec 2007) - Alternate I	APR 1984
52.229-3	Federal, State And Local Taxes	APR 2003
52.232-1	Payments	APR 1984
52.232-2	Payments Under Fixed-Price Research And Development Contracts	APR 1984
52.232-17	Interest	OCT 2010
52.232-17	Interest	OCT 2010
52.232-18	Availability Of Funds	APR 1984
52.232-23	Assignment Of Claims	JAN 1986
52.232-25	Prompt Payment	OCT 2008
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	OCT 2003
52.232-99 (Dev)	Providing Accelerated Payment to Small Business Subcontractors (Deviation)	AUG 2012
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.242-13	Bankruptcy	JUL 1995
52.242-15	Stop-Work Order	AUG 1989
52.243-1 Alt I	Changes--Fixed Price (Aug 1987) - Alternate I	APR 1984
52.244-2	Subcontracts	OCT 2010
52.249-2	Termination For Convenience Of The Government (Fixed-Price)	APR 2012
52.249-9	Default (Fixed-Priced Research And Development)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.203-7000	Requirements Relating to Compensation of Former DoD Officials	SEP 2011
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	DEC 2008
252.203-7002	Requirement to Inform Employees of Whistleblower Rights	JAN 2009
252.203-7005	Representation Relating to Compensation of Former DoD Officials	NOV 2011
252.204-7000	Disclosure Of Information	DEC 1991
252.204-7002	Payment For Subline Items Not Separately Priced	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7008	Export-Controlled Items	APR 2010
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	DEC 2006
252.223-7004	Drug Free Work Force	SEP 1988
252.225-7002	Qualifying Country Sources As Subcontractors	APR 2003
252.225-7012	Preference For Certain Domestic Commodities	JUN 2010
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns	SEP 2004
252.227-7000	Non-estoppel	OCT 1966
252.227-7013	Rights in Technical Data--Noncommercial Items	FEB 2012
252.227-7016	Rights in Bid or Proposal Information	JAN 2011
252.227-7030	Technical Data--Withholding Of Payment	MAR 2000
252.227-7037	Validation of Restrictive Markings on Technical Data	APR 2012
252.232-7010	Levies on Contract Payments	DEC 2006
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.247-7023	Transportation of Supplies by Sea	MAY 2002

CLAUSES INCORPORATED BY FULL TEXT

52.203-14 DISPLAY OF HOTLINE POSTER(S) (DEC 2007)

(a) Definition.

United States, as used in this clause, means the 50 States, the District of Columbia, and outlying areas.

(b) Display of fraud hotline poster(s). Except as provided in paragraph (c)--

(1) During contract performance in the United States, the Contractor shall prominently display in common work areas within business segments performing work under this contract and at contract work sites--

(i) Any agency fraud hotline poster or Department of Homeland Security (DHS) fraud hotline poster identified in paragraph (b)(3) of this clause; and

(ii) Any DHS fraud hotline poster subsequently identified by the Contracting Officer.

(2) Additionally, if the Contractor maintains a company website as a method of providing information to employees, the Contractor shall display an electronic version of the poster(s) at the website.

(3) Any required posters may be obtained as follows:

Poster(s) Obtain from

http://www.oig.dhs.gov/assets/Hotline/DHS_OIG_Hotline-optimized.jpg

(Contracting Officer shall insert—

(i) Appropriate agency name(s) and/or title of applicable Department of Homeland Security fraud hotline poster); and

(ii) The website(s) or other contact information for obtaining the poster(s).)

(c) If the Contractor has implemented a business ethics and conduct awareness program, including a reporting mechanism, such as a hotline poster, then the Contractor need not display any agency fraud hotline posters as required in paragraph (b) of this clause, other than any required DHS posters.

(d) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (d), in all subcontracts that exceed \$5,000,000, except when the subcontract--

(1) Is for the acquisition of a commercial item; or

(2) Is performed entirely outside the United States.

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://farsite.hill.af.mil/vffara.htm>

(End of clause)

252.232-7006 WIDE AREA WORKFLOW PAYMENT INSTRUCTIONS (JUN 2012)

(a) Definitions. As used in this clause--

Department of Defense Activity Address Code (DoDAAC) is a six position code that uniquely identifies a unit, activity, or organization.

Document type means the type of payment request or receiving report available for creation in Wide Area WorkFlow (WAWF).

Local processing office (LPO) is the office responsible for payment certification when payment certification is done external to the entitlement system.

(b) Electronic invoicing. The WAWF system is the method to electronically process vendor payment requests and receiving reports, as authorized by DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.

(c) WAWF access. To access WAWF, the Contractor shall--

(1) Have a designated electronic business point of contact in the Central Contractor Registration at <https://www.acquisition.gov>; and

(2) Be registered to use WAWF at <https://wawf.eb.mil/> following the step-by-step procedures for self-registration available at this Web site.

(d) WAWF training. The Contractor should follow the training instructions of the WAWF Web-Based Training Course and use the Practice Training Site before submitting payment requests through WAWF. Both can be accessed by selecting the "Web Based Training" link on the WAWF home page at <https://wawf.eb.mil/>.

(e) WAWF methods of document submission. Document submissions may be via Web entry, Electronic Data Interchange, or File Transfer Protocol.

(f) WAWF payment instructions. The Contractor must use the following information when submitting payment requests and receiving reports in WAWF for this contract/order:

(1) Document type. The Contractor shall use the following document type(s).

COMBO

(Contracting Officer: Insert applicable document type(s). Note: If a "Combo" document type is identified but not supportable by the Contractor's business systems, an "Invoice" (stand-alone) and "Receiving Report" (stand-alone) document type may be used instead.)

(2) Inspection/acceptance location. The Contractor shall select the following inspection/acceptance location(s) in WAWF, as specified by the contracting officer.

Inspection: Destination

Acceptance: Destination

(3) Document routing. The Contractor shall use the information in the Routing Data Table below only to fill in applicable fields in WAWF when creating payment requests and receiving reports in the system.

Routing Data Table*

Field Name in WAWF	Data to be entered in WAWF
Pay Official DoDAAC	<u>HQ0337</u>
Issue By DoDAAC	<u>M67854</u>
Admin DoDAAC	<u>M67854</u>
Inspect By DoDAAC	<u>M67854</u>
Ship To Code	<u>W81C5M (ABERDEEN TEST CENTER (B358)</u>
Ship From Code	<u>0WJE1</u>
Mark For Code	<u>N/A</u>
Service Approver (DoDAAC)	<u>M67854</u>
Service Acceptor (DoDAAC)	<u>M67854</u>
Accept at Other DoDAAC	<u>N/A</u>
LPO DoDAAC	<u>N/A</u>
DCAA Auditor DoDAAC	<u>N/A</u>
Other DoDAAC(s)	<u>N/A</u>

(*Contracting Officer: Insert applicable DoDAAC information or ``See schedule" if multiple ship to/acceptance locations apply, or ``Not applicable.")

(4) Payment request and supporting documentation. The Contractor shall ensure a payment request includes appropriate contract line item and subline item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), and all relevant back-up documentation, as defined in DFARS Appendix F, (e.g. timesheets) in support of each payment request.

(5) WAWF email notifications. The Contractor shall enter the email address identified below in the ``Send Additional Email Notifications" field of WAWF once a document is submitted in the system.

Name: Mr. Nicholas Johnston (Project Officer)

Email: nicholas.johnston@usmc.mil

(g) WAWF point of contact. (1) The Contractor may obtain clarification regarding invoicing in WAWF from the following contracting activity's WAWF point of contact.

Name: Mr. Nicholas Johnston (Project Officer)

Email: nicholas.johnston@usmc.mil

Phone: (703) 432-3589

(2) For technical WAWF help, contact the WAWF helpdesk at 866-618-5988.

(End of clause)

Section J - List of Documents, Exhibits and Other Attachments

LIST OF ATTACHMENTS

APPENDIX A (attached separately)


Environmental Control Units

Interface Specification

APPENDIX B (attached separately)

Standard Marine Corps

Environmental Specifications

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 3	
2. AMENDMENT/MODIFICATION NO. P00001		3. EFFECTIVE DATE 08-Jul-2013		4. REQUISITION/PURCHASE REQ. NO. M9545013RCR3DW2		5. PROJECT NO. (If applicable)	
6. ISSUED BY MARCORSYSCOM - PG15 ATTN: JAMILA BRANSFORD 2200 LESTER STREET QUANTICO VA 22134		CODE M67854		7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) MAINSTREAM ENGINEERING CORPORATION MICHAEL RIZZO 200 YELLOW PL ROCKLEDGE FL 32955-5327				9A. AMENDMENT OF SOLICITATION NO.			
				9B. DATED (SEE ITEM 11)			
				X 10A. MOD. OF CONTRACT/ORDER NO. M67854-13-C-5039			
				X 10B. DATED (SEE ITEM 13) 08-Jul-2013			
CODE 0A0B7		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
X B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Modification Control Number: bransfoj133844 The purpose of this modification is to insert in Section G [Contract Administration Data] payment instructions that provide a significantly better reflection of how funds will be expended in support of contract performance. All other terms and conditions will remain the same.							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TERRY MCGINN / CONTRACTING OFFICER			
				TEL: 703-432-5028 EMAIL: terence.mcgin@usmc.mil			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)				BY 		26-Aug-2013	
				(Signature of Contracting Officer)			

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION F - DELIVERIES OR PERFORMANCE

The following Delivery Schedule item for CLIN 0001 has been changed from:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
12 mths. ADC	12	U.S. ARMY ABERDEEN TEST CENTER MATT MEHALICK 400 COLLERAN RD. B507 ABERDEEN MD 21005 410-278-6064 FOB: Destination	W81C5M

To:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
08-JUL-2014	12	U.S. ARMY ABERDEEN TEST CENTER MATT MEHALICK 400 COLLERAN RD. B507 ABERDEEN MD 21005 410-278-6064 FOB: Destination	W81C5M

SECTION G - CONTRACT ADMINISTRATION DATA

The following have been added by full text:

PAYMENT INFORMATION

Scheduled Payments for M67854-13-C-5039/ Mainstream Engineering Corporation

Effective: 8 July 2013

Month/ Year	Amount	# Payment	CLIN
July 2013	(b) (4)		
August 2013		1 st Payment	CLIN 0001
September 2013		2 nd Payment	CLIN 0001
October 2013			
November 2013		3 rd Payment	CLIN 0001
December 2013		4 th Payment	CLIN 0001
January 2014			
February 2014		5 th Payment	CLIN 0001
March 2014		6 th Payment	CLIN 0001
April 2014			
May 2014		7 th Payment	CLIN 0001
June 2014		8 th Payment	CLIN 0001

July 2014	(b) (4)		
August 2014		9 th Payment	CLIN 0001
September 2014		10 th Payment	CLIN 0001
October 2014			
November 2014		11 th Payment	CLIN 0001
December 2014		12 th Payment	CLIN 0001
January 2015			
Total			

The following have been modified:

CONTRACT ADMINISTRATION

CONTRACT INFORMATION

CONTRACT TYPE: A Firm Fixed Price Multiple Award contract may be awarded.

CONTRACT FUNDING: Vendor may invoice monthly an amount not to exceed 1/12th (b) (4) of the total contract cost (b) (4). Contract funding shall not exceed (b) (4).

AWARD: The Government reserves the right to award contract(s) to the responsible offeror(s) whose proposal(s) are determined to be in the best interest of the Government other than the lowest priced offeror or other than the highest technically rated offeror.


PERIOD OF PERFORMANCE: The period of performance for the subject contract will be 18 months.

PACKAGING/ DELIVERY/SHIPPING INSTRUCTIONS: Packaging, handling, shipping transportation and marking shall be per Performance Specification.

POINTS OF CONTACT:

Title	Name	Address	Phone	Email
Contracting Officer	Mr. Terence J. McGinn	2200 Lester St. Quantico, VA 22134-5010	(703) 432-3563	Terence.McGinn@usmc.mil
Contract Specialist	Ms. Jamila Z. Bransford	2200 Lester St. Quantico, VA 22134-5010	(703) 432-3726	Jamila.Bransford@usmc.mil
Project Officer	Mr. Nicholas Johnston	2200 Lester St. Quantico, VA 22134-5010	(703) 432- 3589	Nicholas.Johnston@usmc.mil
DCMA	N/A	N/A	N/A	N/A
DFAS (HQ0338)	DFAS Columbus Center – HQ0338	DFAS CO/South Entitlement Operations, P. O. Box 182264, Columbus, OH 43218- 2264	(800) 756- 4571	N/A

(End of Summary of Changes)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 5	
2. AMENDMENT/MODIFICATION NO. P00002		3. EFFECTIVE DATE 16-Oct-2013		4. REQUISITION/PURCHASE REQ. NO. M9545013RCR3DW2		5. PROJECT NO. (If applicable)	
6. ISSUED BY MARCORSYSCOM - PG15 ATTN: JAMILA BRANSFORD 2200 LESTER STREET QUANTICO VA 22134		CODE M67854		7. ADMINISTERED BY (If other than item 6) See Item 6			
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) MAINSTREAM ENGINEERING CORPORATION MICHAEL RIZZO 200 YELLOW PL ROCKLEDGE FL 32955-5327				9A. AMENDMENT OF SOLICITATION NO.			
				9B. DATED (SEE ITEM 11)			
				X 10A. MOD. OF CONTRACT/ORDER NO. M67854-13-C-5039			
				X 10B. DATED (SEE ITEM 13) 08-Jul-2013			
CODE 0A0B7		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of offer <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
X D. OTHER (Specify type of modification and authority) IAW FAR 43.103(a)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return 1 copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Modification Control Number: bransfoj14103 The purpose of this modification is to change: 1. CLIN 000302 Meeting (In Process Review) will be changed to reflect four (4) months from ADC vice three (3) months from ADC. 2. CLIN 000303 Meeting (Final Design Review) will be changed to reflect eight (8) months from ADC vice six (6) months from ADC. 3. WAWF Clause DFARS 252.232-7006 will be changed to reflect the following changes in respect by DoDAAC Service Approver, Service Approver, and Accept at Other DoDAAC's (b) (4) <div style="background-color: black; height: 100px; width: 100%;"></div>							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TERRY MCGINN / CONTRACTING OFFICER TEL: 703-432-5028 EMAIL: terence.mcgin@usmc.mil			
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY 		16C. DATE SIGNED 15-Nov-2013	

EXCEPTION TO SF 30
APPROVED BY OIRM 11-84

30-105-04

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION B - SUPPLIES OR SERVICES AND PRICES

SUBCLIN 000302

The CLIN extended description has changed from IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at Quantico, VA three (3) months from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED, to IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at Quantico, VA four (4) from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. EPS/UIC M67854NICHOLAS JOHNSTONMARCORSYSCOM2200 LESTER STREETQUANTICO VA 22134TEL: 703-432-3589.

SUBCLIN 000303

The CLIN extended description has changed from IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at contractor's location six (6) months from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. OFFEROR'S PROPOSAL SHALL NOT EXCEED (b) (4) to IAW Section 3.5 (Meetings) from the Statement of Work. Performed once at contractor's location eight (8) months from date of award. CLIN AND SUBCLIN ARE NOT TO BE SEPARATELY PRICED. EPS/UIC M67854NICHOLAS JOHNSTONMARCORSYSCOM2200 LESTER STREETQUANTICO VA 22134TEL: 703-432-3589.

SECTION F - DELIVERIES OR PERFORMANCE

The following Delivery Schedule Item has been deleted from SUBCLIN 000302:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
POP 04-NOV-2013 TO 05-DEC-2013	N/A	EPS NICHOLAS JOHNSTON MARCORSYSCOM 2200 LESTER STREET QUANTICO VA 22134 703-432-3513 FOB: Destination	M67854

The following Delivery Schedule Item has been deleted from SUBCLIN 000303:

DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
POP 03-MAR-2014 TO 31-MAR-2014	N/A	N/A FOB: Destination	

SECTION I - CONTRACT CLAUSES

The following have been modified:

252.232-7006 WIDE AREA WORKFLOW PAYMENT INSTRUCTIONS (JUN 2012)

(a) Definitions. As used in this clause--

Department of Defense Activity Address Code (DoDAAC) is a six position code that uniquely identifies a unit, activity, or organization.

Document type means the type of payment request or receiving report available for creation in Wide Area WorkFlow (WAWF).

Local processing office (LPO) is the office responsible for payment certification when payment certification is done external to the entitlement system.

(b) Electronic invoicing. The WAWF system is the method to electronically process vendor payment requests and receiving reports, as authorized by DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.

(c) WAWF access. To access WAWF, the Contractor shall--

(1) Have a designated electronic business point of contact in the Central Contractor Registration at <https://www.acquisition.gov>; and

(2) Be registered to use WAWF at <https://wawf.eb.mil/> following the step-by-step procedures for self-registration available at this Web site.

(d) WAWF training. The Contractor should follow the training instructions of the WAWF Web-Based Training Course and use the Practice Training Site before submitting payment requests through WAWF. Both can be accessed by selecting the "Web Based Training" link on the WAWF home page at <https://wawf.eb.mil/>.

(e) WAWF methods of document submission. Document submissions may be via Web entry, Electronic Data Interchange, or File Transfer Protocol.

(f) WAWF payment instructions. The Contractor must use the following information when submitting payment requests and receiving reports in WAWF for this contract/order:

(1) Document type. The Contractor shall use the following document type(s).

COMBO

(Contracting Officer: Insert applicable document type(s). Note: If a "Combo" document type is identified but not supportable by the Contractor's business systems, an "Invoice" (stand-alone) and "Receiving Report" (stand-alone) document type may be used instead.)

(2) Inspection/acceptance location. The Contractor shall select the following inspection/acceptance location(s) in WAWF, as specified by the contracting officer.

Inspection: Destination

Acceptance: Destination

(3) Document routing. The Contractor shall use the information in the Routing Data Table below only to fill in applicable fields in WAWF when creating payment requests and receiving reports in the system.

Routing Data Table*

Field Name in WAWF	Data to be entered in WAWF
Pay Official DoDAAC	<u>HQ0337</u>
Issue By DoDAAC	<u>M67854</u>
Admin DoDAAC	<u>M67854</u>
Inspect By DoDAAC	<u>M67854/ ext PM 31</u>
Ship To Code	<u>W81C5M</u>
Ship From Code	<u>0A0B7</u>
Mark For Code	<u>N/A</u>
Service Approver (DoDAAC)	<u>N/A</u>
Service Acceptor (DoDAAC)	<u>N/A</u>
Accept at Other DoDAAC	<u>M67854/ ext PM 31</u>
LPO DoDAAC	<u>N/A</u>
DCAA Auditor DoDAAC	<u>N/A</u>
Other DoDAAC(s)	<u>N/A</u>

(*Contracting Officer: Insert applicable DoDAAC information or "See schedule" if multiple ship to/acceptance locations apply, or "Not applicable.")

(4) Payment request and supporting documentation. The Contractor shall ensure a payment request includes appropriate contract line item and subline item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), and all relevant back-up documentation, as defined in DFARS Appendix F, (e.g. timesheets) in support of each payment request.

(5) WAWF email notifications. The Contractor shall enter the email address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system.

Name: **Mr. Nicholas Johnston (Project Officer)**

Email: **nicholas.johnston@usmc.mil**

(g) WAWF point of contact. (1) The Contractor may obtain clarification regarding invoicing in WAWF from the following contracting activity's WAWF point of contact.

Name: **Mr. Nicholas Johnston (Project Officer)**

Email: **nicholas.johnston@usmc.mil**

Phone: (703) 432-3589

(2) For technical WAWF help, contact the WAWF helpdesk at 866-618-5988.

(End of clause)

SECTION J - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

The following have been modified:

LIST OF ATTACHMENTS

APPENDIX A (attached separately)

Environmental Control Units

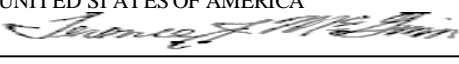
Interface Specification (CHANGE MADE EFFECTIVE 21 OCTOBER 2013)

APPENDIX B (attached separately)

Standard Marine Corps

Environmental Specifications

(End of Summary of Changes)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. P00003		3. EFFECTIVE DATE 30-Jun-2014		4. REQUISITION/PURCHASE REQ. NO. M9545013RCR3DW2		5. PROJECT NO.(If applicable)	
6. ISSUED BY MARCORSYSCOM - PG15 ATTN: JAMILA BRANSFORD 2200 LESTER STREET QUANTICO VA 22134		CODE M67854		7. ADMINISTERED BY (If other than item 6) MARCORSYSCOM - PG15 ATTN: JAMILA BRANSFORD 2200 LESTER STREET QUANTICO VA 22134		CODE M67854	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) MAINSTREAM ENGINEERING CORPORATION MICHAEL RIZZO 200 YELLOW PL ROCKLEDGE FL 32955-5327				9A. AMENDMENT OF SOLICITATION NO.			
				9B. DATED (SEE ITEM 11)			
				X 10A. MOD. OF CONTRACT/ORDER NO. M67854-13-C-5039			
				X 10B. DATED (SEE ITEM 13) 08-Jul-2013			
CODE 0A0B7		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
X B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Modification Control Number: bransfoj142162 The purpose of this modification is to extend delivery dates for the following CLINs (CLIN 0001: Design/Fabrication/Delivery of E2CU) and (CLIN 0002: Technical Data {3.4.2 Affordability and Producibility & 3.4.5 Design and Fabrication Report}). (1) CLIN 0001: Design/Fabrication/Delivery of E2CU will now reflect hand delivery will be accepted on the date of TRR meeting (15 July 2014) vice 8 July 2014 at stated location. (2) CLIN 0002 Technical Data: 3.4.2 Affordability and Producibility Assessment and 3.4.5 Design and Fabrication Report will be accepted no later than 8 September 2014 vice 8 July 2014. These changes are advantageous for the Government and no cost to the vendor. All other terms and conditions will remain the same.							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TERRY MCGINN / CONTRACTING OFFICER TEL: 703-432-5028 EMAIL: terence.mcgin@usmc.mil			
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)		16C. DATE SIGNED 15-Jul-2014	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION B - SUPPLIES OR SERVICES AND PRICES

CLIN 0001

The CLIN extended description has changed from IAW wiith Paragraphs 3.0 -Technical Approach [3.1 Design/Fabriacation / 3.2 System Safety / and 3.3 Test Support) of the Statement of Work. The contractor is responsible for providing all materials, services and necessary support documentation needed to deliver three (3) 36K and three (3) 60K E2CU prototypes. Delivery of units shall be no later than twelve (12) months after contract award. Period of Performance for entire award/contract will be 18 months from date of award. to IAW wiith Paragraphs 3.0 -Technical Approach [3.1 Design/Fabriacation / 3.2 System Safety / and 3.3 Test Support) of the Statement of Work. The contractor is responsible for providing all materials, services and necessary support documentation needed to deliver three (3) 36K and three (3) 60K E2CU prototypes. Delivery of units shall be no later than twelve (12) months after contract award. Period of Performance for entire award/contract will be 18 months from date of award. MODIFICATION: DELIVERY OF E2CU CAN BE HAND DELIVERED TO STATED DATE/LOCATION IRT THE TRR MEETING.

CLIN 0002

The CLIN extended description has changed from IAW Section 3.4 - Technical Data [3.4.1 Product Specification / 3.4.2 Affordability and Producibility Assessment / 3.4.3 Operations and Maintenance Manual / 3.4.4 Monthly Progress Reports / 3.4.5 Design and Fabrication Report] of the Statement of Work. CLIN IS NOT TO BE SEPARATELY PRICED. At six (6) months after award, the contractor shall deliver, in electronic format to email: nicholas.johnston@usmc.mil/ (703) 432-3589, a Draft Product Specification. An updated Products Specification shall be delivered with ECU delivery no later than 12 months after award. to IAW Section 3.4 - Technical Data [3.4.1 Product Specification / 3.4.2 Affordability and Producibility Assessment / 3.4.3 Operations and Maintenance Manual / 3.4.4 Monthly Progress Reports / 3.4.5 Design and Fabrication Report] of the Statement of Work. CLIN IS NOT TO BE SEPARATELY PRICED. At six (6) months after award, the contractor shall deliver, in electronic format to email: nicholas.johnston@usmc.mil/ (703) 432-3589, a Draft Product Specification. An updated Products Specification shall be delivered with ECU delivery no later than 12 months after award. MODIFICATION: (1) 3.4.2 AFFORDABILITY AND PRODUCIBILITY ASSESSMENT and (2) 3.4.5 DESIGN AND FABRICATION REPORT DELIVERY DATES CAN BE EXTENDED NOT TO EXCEED DELIVERY DATE of 8 SEPTEMBER 2014. THE DELIVERY FORMAT WILL REMAIN THE SAME; ELECTRONIC TO MR. JOHN PHILPOTT AT JOHN.C.PHILPOTT@USMC.MIL. HIS PHONE NUMBER IS (703) 432-3628. ENSURE THAT THE DOCUMENT DOES NOT EXCEED 8-10MB. IF ATTACHMENT EXCEEDS 8-10MB SEND TWO (2) EMAILS. SUBJECT STATED: CONTRACT#/VENDOR NAME/NAME OF ATTACHMENT(1 of 2) and (2 of 2).

(End of Summary of Changes)